INLAYLINK

E310B RFID Module User Guides

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Product introduction

Main features

·UHF transcevier
·Array antenna, no dead Angle in the coverage area
·Extreme appearance design
·Nano - scale material shell, aluminum base plate, with excellent all-round heat dissipation performance

Industry application

Logistics, warehousing, express delivery, stores, financial management, etc.

Warning

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user’ s authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Product introduction

Warning

Antenna used

Antenna Type	Brand/ manufacture	Model No.	Max. Antenna Gain
PCB antenna	INLAYLINK	iA90N10S	-15dbi

Instruction to Host product manufacturer when choosing external connector:

Unique antenna connector must be used on our Part 15 authorized transmitters used in the host product. Here is a list of acceptable unique connectors:

Brand/ manufacture	Model No.
IPEX	20278-112R-13
IPEX	20279-001E-03

FCC regulatory compliance statement

§ 15.21 Information to user

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user’ s authority to operate the equipment.

RF Exposure compliance statement

This Module complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Product introduction

FCC regulatory compliance statement

Labelling Instruction for Host Product Integrator

Please notice that if the FCC is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. For FCC, this exterior label should follow "Contains FCC ID: 2A92M-E310B". In accordance with FCC KDB guidance 784748 Labeling Guidelines. "

§ 15.19 Labelling requirements shall be complied on end user device.

Labelling rules for special device, please refer to § 2.925, § 15.19 (a)(5) and relevant KDB publications. For E-label, please refer to § 2.935.

Installation Notice to Host Product Manufacturer

The OEM integrator is responsible for ensuring that the end-user has no manual instruction to remove or install module.

The module is limited to installation in mobile application, a separate approval is required for all other operating configurations, including portable configurations with respect to § 2.1093 and difference antenna configurations.

Antenna Change Notice to Host manufacturer

If you desire to increase antenna gain and either change antenna type or use same antenna type certified, a Class II permissive change application is required to be filed by us, or you (host manufacturer) can take responsibility through the change in FCC ID procedure followed by a Class II permissive change application.

Product introduction

FCC regulatory compliance statement

FCC other Parts, Part 15B Compliance Requirements for Host product manufacturer
This modular transmitter is only FCC authorized for the specific rule parts listed on our grant, host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

Host manufacturer in any case shall ensure host product which is installed and operating with the module is in compliant with Part 15B requirements.
Please note that For a Class B or Class A digital device or peripheral, the instructions furnished the user manual of the end-user product shall include statement set out in § 15.105 Information to the user or such similar statement and place it in a prominent location in the text of host product manual. Original texts as following:

For Class B

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

Product introduction

FCC regulatory compliance statement

For Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Main technical parameters

Physical specifications

Communication interface	USB
Transmission rate	USB：3Mbps
Antenna interface	1Port (I-PEX)
Power supply mode	USB3.0 or later Type-C
Rated power	5W
Materials	FR4
Size	70mm x 35mm x 5 mm
Weight	15g

RFID specifications

Sensitivity	-75dBm
Working frenquency	UHF：902MHz ~ 928MHz
Protocol	UHF：RAIN RFID/ISO 18000-63 EPCglobal Gen2v2
RF power	⩽27 dBm
Reading speed	250 tags / s
Identify the distance	10m
Written to the distance	6m

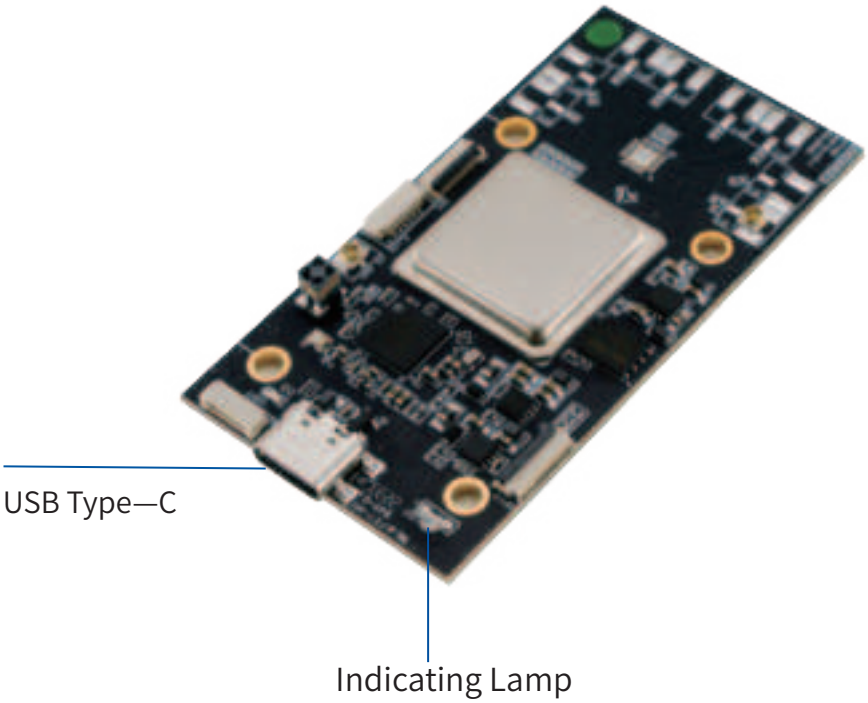
Performance specifications

CPU	Dual-core Cortex-M33
Internal storage	512KB
Memory	1MB+8MB

Working environment

Protection level	IP45
Working temperature	-20 °C~+65°C
Storage temperature	-45°C~+70°C
Working humindity	10%~90% (Without condensates)

Interface specification



Software

UI

The application software interface consists of the function menu bar on the left, the software operation panel on the right, and the information bar at the bottom, as shown in Figure 5-1.

Figure 5-1

Software

Basic settings

After the device is successfully connected to the device, open the “ inlayuhfReader. exe”

go to the Reader Settings page.

If the device is successfully connected, "Serial Port Number" is automatically selected. If the serial port number is incorrect, right-click "Computer" on the desktop, choose "Management", enter the computer management interface, choose "Device Manager", and view the corresponding serial port number in "Port", as shown in Figure 5-2.

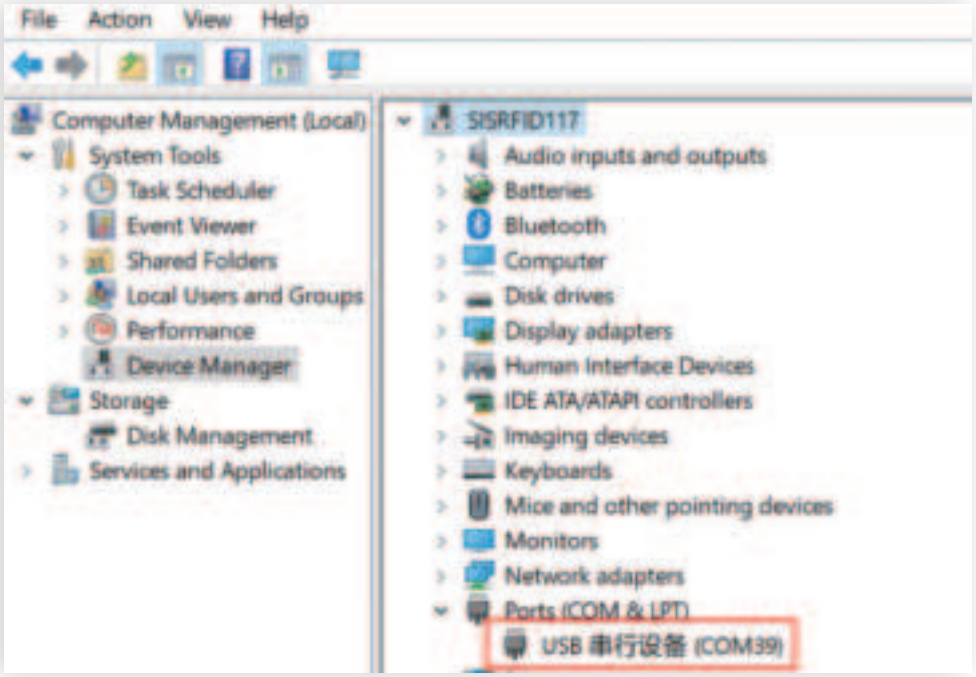


Figure 5-2

On the basic parameter setting page, select the corresponding serial port number, serial port baud rate, and reader model to 115200 and E710B, and click Connect Reader. After the connection is successful, click "Firmware Version" to display the publication number, which can prove that the reader has been successfully connected, as shown in Figure 5-3.

Software

Figure 5-3

RF Configs

Click "RF Configs" to set the RF mode of the reader, as shown in Figure 5-4.

Figure 5-4

Software

RF Configs

In the antenna parameter column, you can view the power, working time and counting times of each antenna. Click the antenna name to select the enabled antenna (after successful selection, the antenna name will be displayed in blue), enter the value, and click "set". The maximum power is 27dBm. After successful setting, the success message will be displayed in the bottom information bar. As shown in Figure 5-5.

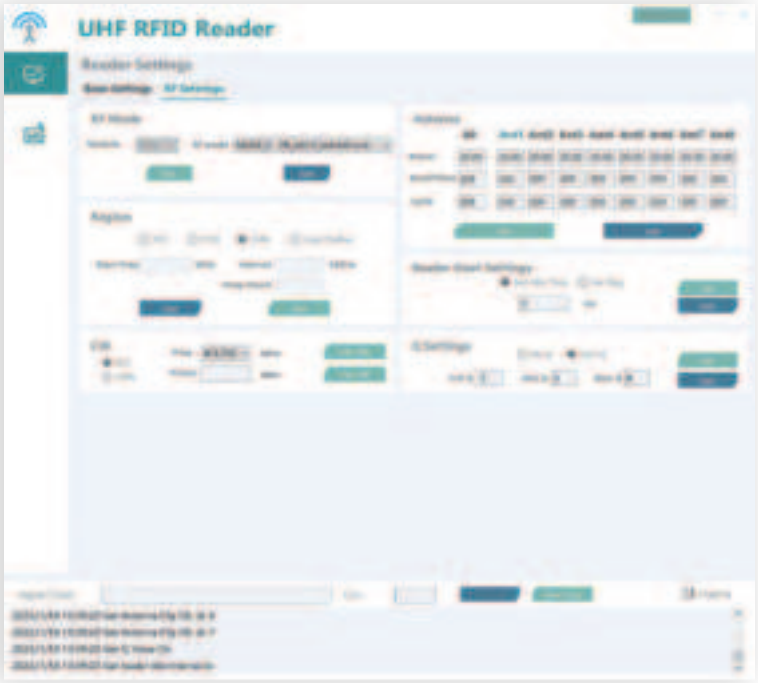


Figure 5-5

Software

Select the RF spectrum (FCC, ETSI, CHN). The default value is CHN(China).

Select the antenna and set the power and inventory time.

Adjust the Q value based on the actual situation (the more tags, the larger the Q value). Set the idle time of the antenna to reduce power consumption (0 by default).

Set frequency and power. CW ON/CW Off enables carrier testing.

Real-time tag inventory

Select the second column of the sidebar to enter the "Real-time Tag Inventory" interface of 18000-6C tag test. You can set inventory parameters, perform tag inventory and view inventory data, as shown in Figure 5-6.

Figure 5-6

Software

There are two types of inventory mode, Target and Session.
The parameters are as follows:

1) Taget, Tag interface
A: Select the status of Tag side A
B: Select the status of Tag side B
AB: Select the round-cut status of both Tag side A and B

2) Session, Tag Session value:
S0: Tags change status immediately after being counted
S1: The tag will stay 0.5-5 seconds to change its status after being counted
S2: The tag stays in status for as long as it gains power and stays in status for 2-60 seconds after losing power
S3: The same as S2
Note: The difference of different tags may affect the status of the Session

Click "Start inventory", and you can read the EPC, TID, RSSI, ANTID, times and other information of the tag.
Set the automatic stop time. Select "Automatic Stop" to set the read time.

Software

Access tag

Click "Access Tag" to read, write, set, and destroy tags. As shown in Figure 5-7.

Figure 5-7

1) Select Tag

After checking the tags in the real-time inventory TAB page, select the tag EPC to be operated in the "tag List" and click "Select tag". The EPC of the selected tag will appear in the "Select Tag" box.

2) Read and write tags

Select the area to be written, enter the correct access password (the default password is 00000000), enter the start address, data length, and data to be written, and click "Write tag" to write the tag. Click "Read Tag" to confirm whether the tag data is correct.

3) Set tags

Select the area to be operated, select the status to be set, enter the correct access password (the default password is 00000000), and click Set label to set the tag status.

4) Kill Tags

Enter the correct access password (default password: 00000000) and click Kill Tag to destroy the tag data.

5) Tag extension function

When the Fast Id function is enabled, TID data can be displayed on the tag inventory interface.

Note: The above is the basic operation steps, detailed operation see the Inlaylink reader Demo program instruction.

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